

ABSTRACT

A charged particle beam apparatus includes a charged particle beam source for directing a charged particle beam along a beam path in a downstream direction to a target, and a processing station that defines a target chamber. The processing station includes a chamber divider which divides the target chamber into upstream and downstream regions during charged particle beam processing of the target, the target being located in the downstream region. The divider has an aperture therethrough sized to permit passage of the ion beam to the target without substantial blockage and to limit backflow of gas into the upstream region of the chamber. The divider minimizes the beam volume which is exposed to extraneous species generated at the target and thereby reduces the probability of beam-altering collisions.